

Comments on CNSC Discussion Paper DIS-16-03 – Radioactive Waste Management and Decommissioning

September 23, 2016

NRCan appreciates the opportunity to review and provide comments on CNSC Discussion Paper DIS-16-03 – Radioactive Waste Management and Decommissioning. We have reviewed Atomic Energy of Canada Limited's comments on the document, dated September 9, 2016, and are in general agreement with them. In particular, we share their concerns about the proposed categories for radioactive waste and making "reduce, reuse, recycle" a requirement, and support the CNSC's efforts to revise the regulatory approach for releasing a nuclear facility from regulatory oversight, following the completion of decommissioning and remediation, to clarify the concept of abandonment.

NRCan has the following additional comments on the Discussion Paper:

General

- NRCan suggests replacing all references to "nuclear waste" (for example, last sentence in first paragraph on page 5), where it is used as a general descriptor of waste generated from the nuclear fuel cycle, with "radioactive waste" to provide consistency in terminology.

Section 2.1 – Defining waste types (waste categories)

- On page 5, low-level radioactive waste (LLW) is defined as having "limited amounts of long-lived activity", and typical waste sources and types are listed. The nuclear fuel production cycle, which is listed as a source of LLW, generates waste that contains largely long-lived activity, albeit in limited amounts, similar to uranium mine and mill tailings. It may be helpful to make clear that the largest volume of LLW in Canada is contaminated soil (historic waste) that contains long-lived activity, and does not contain appreciable quantities of short-lived activity.
- On page 6, we understood that the thermal power associated with waste from medical isotope production was not sufficient to categorize the waste as "high-level radioactive waste". NRCan suggests that the CNSC confirm the thermal power associated with isotope production waste to confirm the appropriate categorization.

Section 2.2 – Making "reduce, reuse, recycle" a requirement

- NRCan notes that the "reduce, reuse and recycle" principle is somewhat analogous to the ALARA principle: *as low as reasonably achievable, economic and social factors being taken into account*. If the CNSC wishes to make "reduce, reuse, recycle" a requirement, it will be important to include caveats to indicate that the application of the principle needs to take into account practical and economic considerations, as well as important national objectives such as the need to reduce greenhouse gases.
- In Section 2.2, it is not clear whether the CNSC intends to apply the "reduce, reuse and recycle" principle to the generation of radioactive waste, waste in general, or both. For example, if

waste from the decommissioning of a nuclear facility contains a mixture of both radioactive and conventional waste, would the CNSC expect a licensee to sort and segregate the radioactive waste from the conventional waste so that they can be sent to different disposal facilities, or would the CNSC be equally satisfied if the licensee chose to send all of the waste to an appropriate radioactive waste disposal facility?

Section 2.6 – Regulating remediation activities

- On page 12, the Discussion Document states: “The risk associated with existing legacy situations has often been understood, but difficult to accurately model. Decisions about these legacy sites must be made in the absence of the knowledge that would be present when licensing a modern facility throughout its lifecycle.”
- NRCan suggests that with proper and comprehensive characterization, sufficient data can be compiled for legacy sites to assess, through modeling, the benefits and risks associated with potential remedial strategies to permit decision-making. While certain knowledge, such as historic records, may be absent, it does not need to be an impediment to developing and implementing appropriate and cost-effective remedial strategies to protect people and the environment.